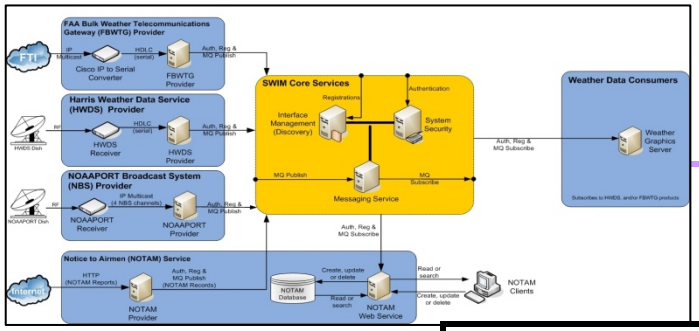
SWIM Alliance: Integrated Laboratories, Comprehensive Capabilities & The Possibilities

Presented to:	Demonstration and Prototyping Information Exchange Briefing
By:	SWIM Alliance Partners
Date:	June 03, 2009

BOEING CSC HARRIS LOCKHEED MARTIN

SWIM Alliance Integrated Labs: Applications – Functional View

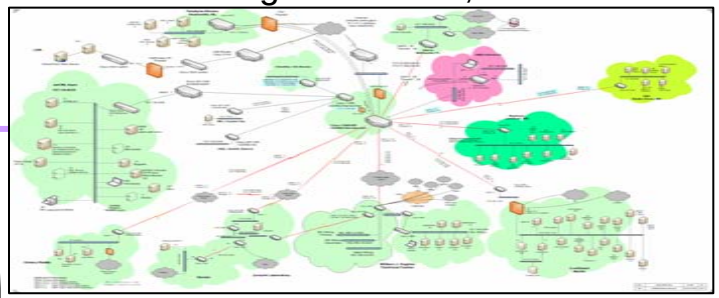
Harris – Melbourne, FL



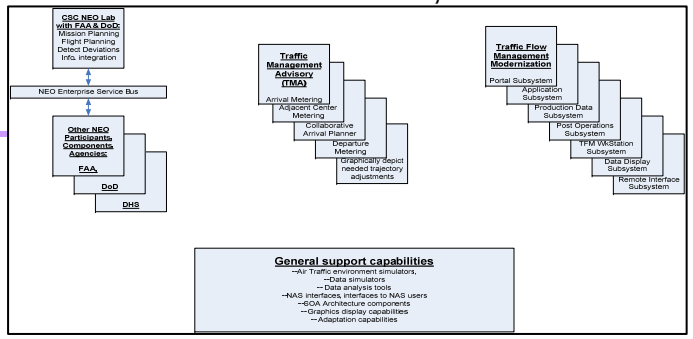
FTI Dev NOCC

Alliance Network

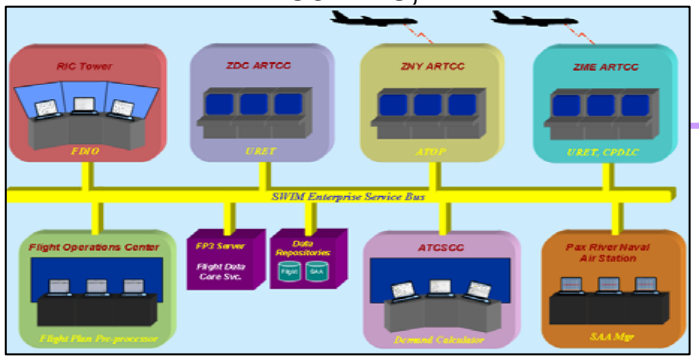
Boeing – Herndon, VA



CSC – Rockville, MD



LM – Rockville, MD



SDP

Integrated Airport

Daytona Airport

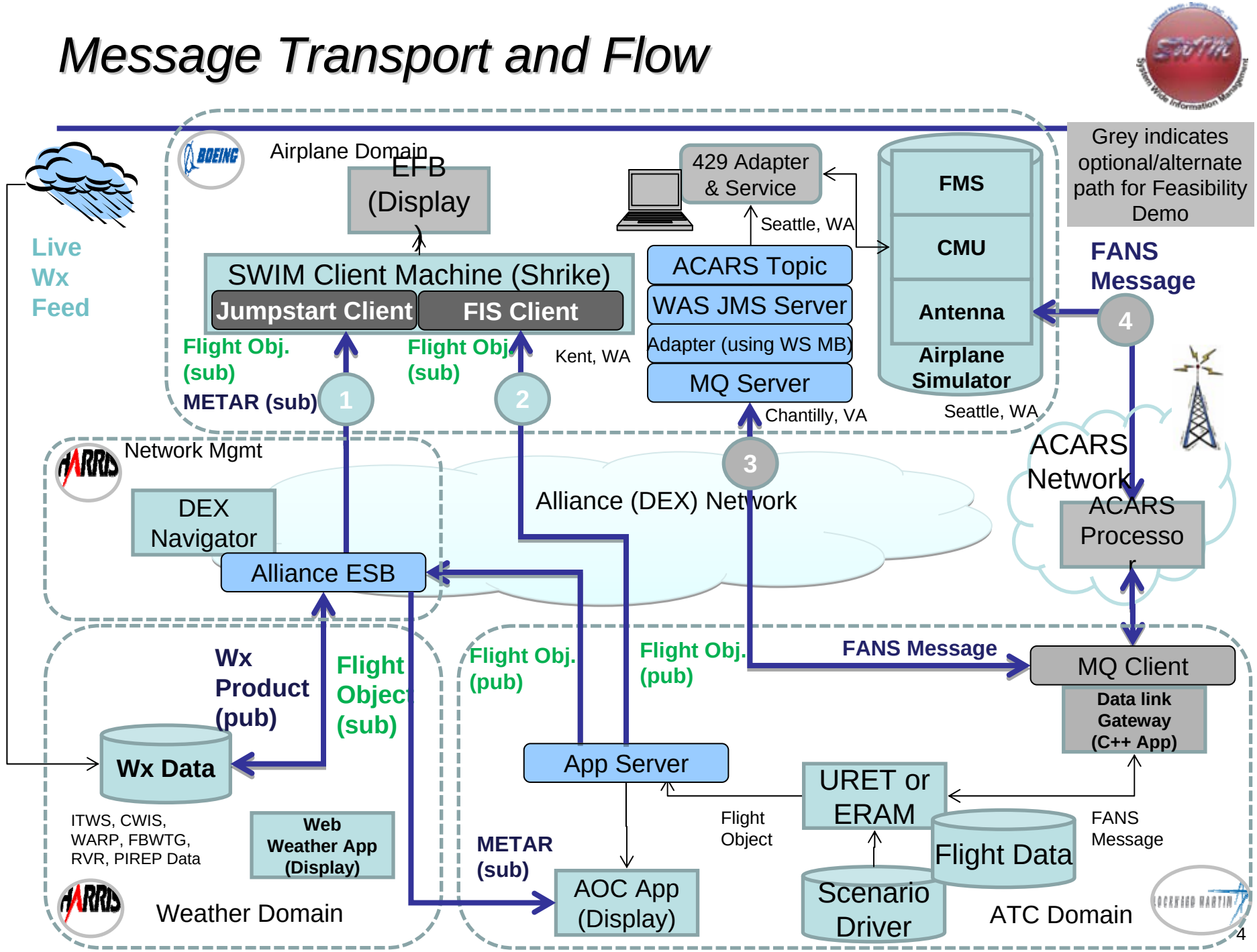
FTI SWIM Services

Application Services

Integrated Alliance Labs Network

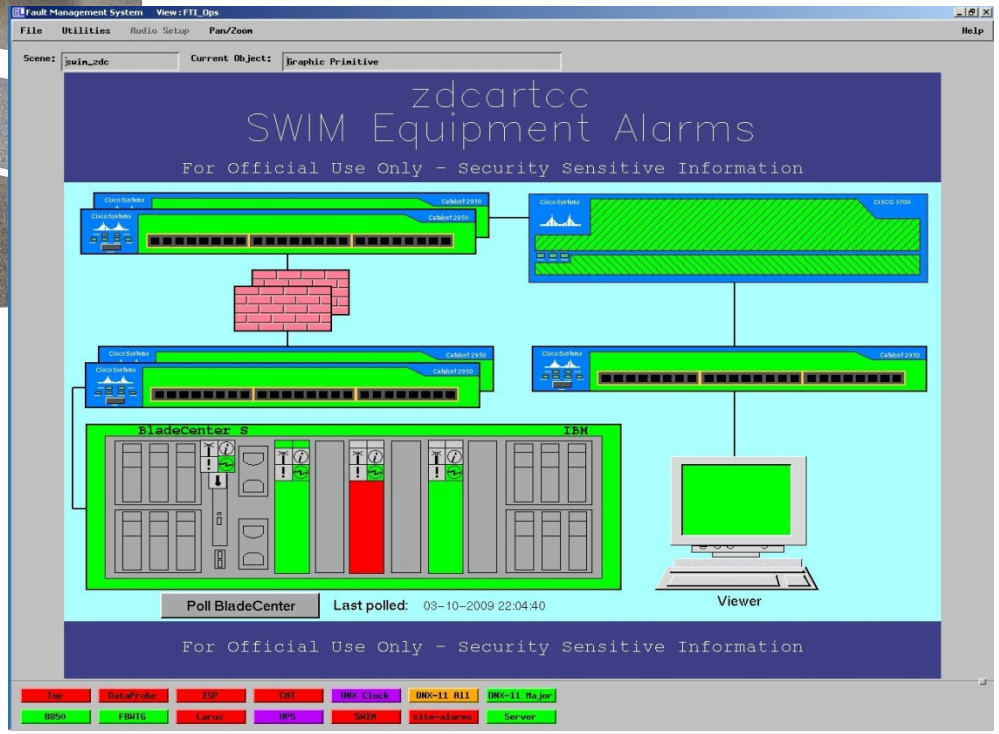
- Status
  - *Connectivity established between Harris, Boeing & Lockheed labs*
  - *Net-centric Core Service Infrastructure installed & integrated utilizing FTI EDX image*
  - *Functional integration between these facilities is almost complete*
    - *LM ERAM publishing FDO directly through ERAM FIS (Federated)*
      - *LM ERAM publishing FDO to the centralized defined topic tree in the DEX (Consolidated)*
    - *Boeing subscribing to FDO*
    - *Harris subscribing to FDO for graphical weather display*
    - *Harris publishing METARS*
    - *LM AOC and Boeing EFB subscribing to the METAR data*

Message Transport and Flow



Demonstration

Situational Awareness: NOCC Display



Integrated Alliance Labs Network

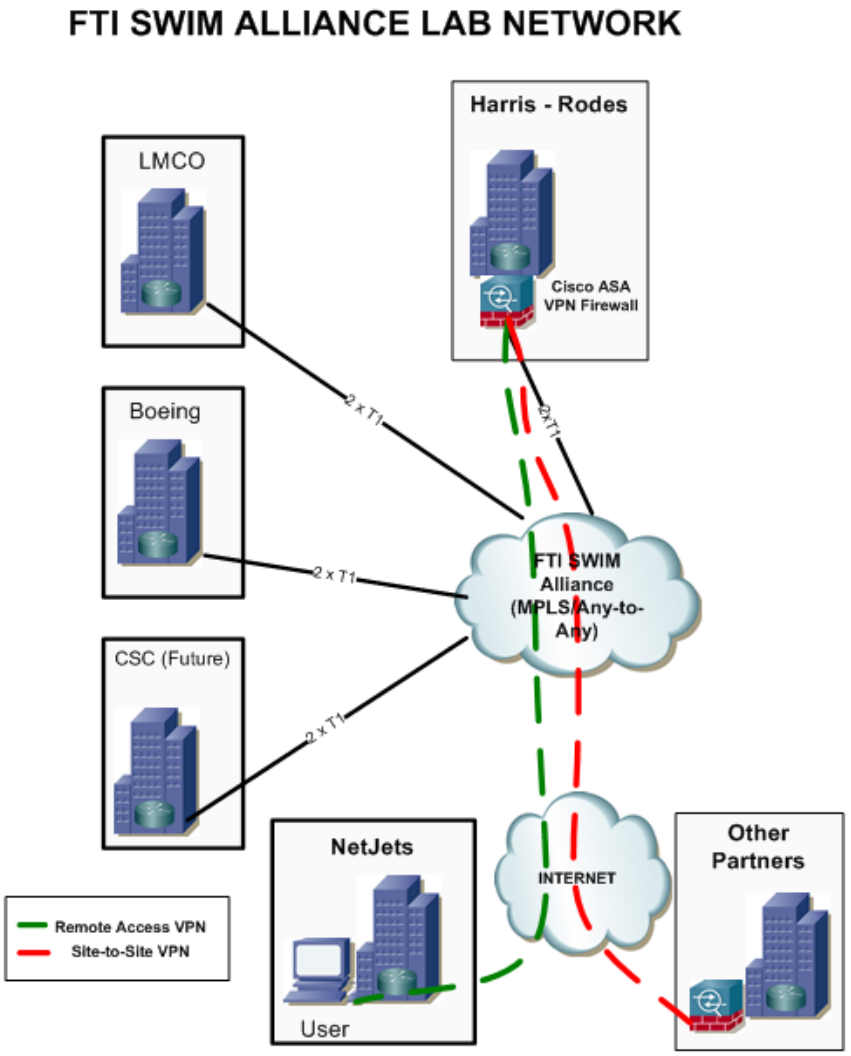
- Benefits:
  - Alliance combined NAS expertise spans key NAS capabilities
  - Integrated labs leverage Alliance combined capabilities
    - "Microcosm of the NAS" offers end-to-end flight management
      - Flight Deck, Airport, Terminal & En-route systems exchanging data with Net-centric Core Services

- Value Proposition:
  - Combined competencies bring together largest NAS systems in an integrated environment
    - Breadth of the environment lends itself for prototyping use cases and demonstrations
  - Ability to demonstrate provisioning of net-centric core services
    - Enables prototyping for both publish/subscribe & web services capabilities for enterprise and localized core services
    - Applications avoid cost/complexity of core services development & concentrate on the service they provide or consume

Integrated Alliance Labs Network Next Steps

- ***Continue to explore potential collaboration with FAA to identify NextGen use cases, trade studies & FAA lab facility integration***
- ***Collaborate with NetJets to produce working prototype for Collaborative Flight Planning and Monitoring (CFPM)***
  - *CSC and LM collaborated on "CFPM" concept involving ERAM and TFMS to create a 'new' SOA type application based on the Mitre FPPP*
    - *LM developed prototype CFPM Application under IR&D and included in LM's SWIM Demo*
      - *Added a monitor function to provide dynamic updates to users*
  - *LM in process of recruiting 1 or 2 'traditional' airline partners to participate in this activity*
  - *Completed Preliminary Design Review w/ NetJets 5/19/09*
    - *LM making identified changes to CFPM*
    - *NetJets evaluating proposed communications options*
    - *Establishing communications links between NetJets and SWIM Alliance Network*
  - *Install CFPM client at NetJets*
  - *Conduct prototype testing to verify value to users and identify necessary changes*
  - *Conduct demos of working prototype in Fall 2009*
  - *Present to FAA fall 2009*
    - *Concept can not move forward without FAA sponsorship*

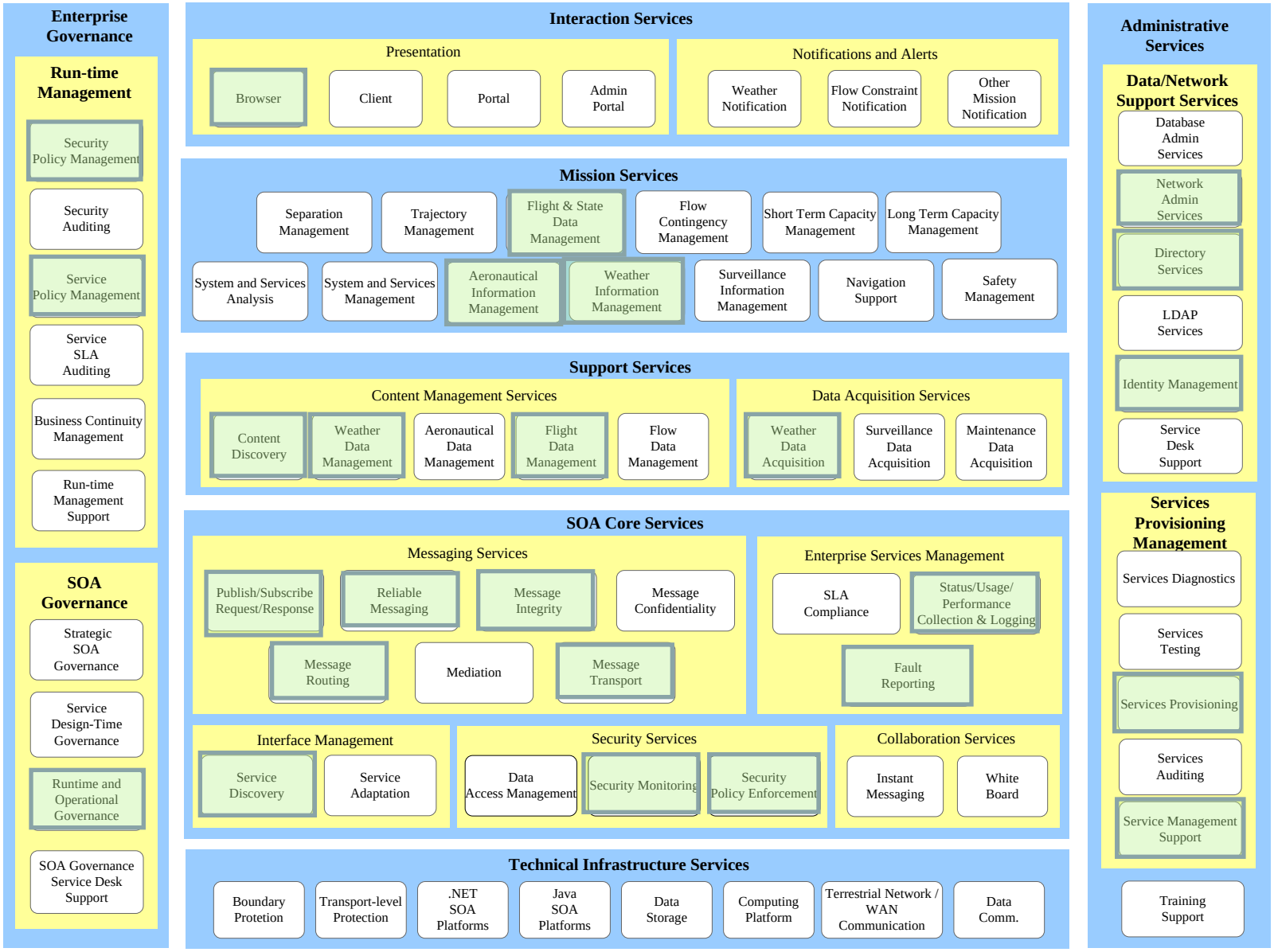
SWIM Alliance – NetJets Collaboration



- Use Case: AOC Dispatcher is able to trial flight plans before filing, gain insight into the status of the NAS thru SWIM services. TFMS obtains early intent information from operators. AOC Dispatcher receives dynamic updates affecting route of flight both pre-departure and post-departure.

- Value Proposition to Stakeholders:
  - Operators
    - More detailed understanding of how the NAS will process flight plan requests resulting in flight plan submittal which optimizes for their business rules
  - FAA
    - TFMS gains early insight into traffic demands resulting in better strategic planning and more efficient NAS operations

NextGen NAS SV-4 Framework



End Presentation